When the Mississippi Flowed Northward

The Esoteric History of the Earth

By WILLIAM DUDLEY PELLEY



The Seventh of

The GALAHAD LECTURES

"When the Mississippi Flowed Northward"

BEING THE SEVENTH OF

The Galahad Lectures

THE GALAHAD LECTURES constitute a great curriculum of information on the Unknown Esoteric History of the Earth, from the time of its conception as a planet, up through the Edenic period when the first forms of human life existed under the Great Water-Veil, into the Antediluvian world with its strange civilizations, and through the Atlantean and Egyptian epochs into the modern Christian. ¶ These Scripts comprise the Instruction given as part of the Lecture Courses of Galahad College Summer School held in Asheville, N. C., in the summer of 1932 and have been recorded and preserved in this form for students of the Foundation Fellowship. ¶ The Foundation Fellowship is a nation-wide assembly of Metaphysical Students, sacredly searching for the true fundamentals behind life in Mortality and for accurate knowledge of the soul's enhancements in octaves higher than those of earth.

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"When the Mississippi Flowed North"

SEVENTH LECTURE

WE terminated our last Lecture-Lesson at that point in the planet's development where it began to absorb water in terrific amounts. This water absorption played no small part in the emergence and contour of the various continents. ¶ We have seen that all the materials that were later to compose the earth as we now know it, were contained in the primordial Energy from which our planet first derived. This Energy in motion became a nebula, its core being formed of substances of heaviest specific gravity with the lighter materials spinning around them on a more or less flat plane, far out into the reaches of Space, with the water-sphere and atmosphere whirling in vast rings farthest out from the center.

Bearing this in mind, we discern this core gradually cooling and slowing down. When all the lighter materials in the nebula had been thrown off into encircling rings by centrifugal force, the moon and other planets began to act as brakes on the outer surfaces. This braking influence gradually caused the inside rings to lower. But they lowered and finally fell to earth's surface at the two poles, from where the whirling motion of the infant earth distributed the substances of such precipitations over its surface and built up the spherical form stratum by stratum.

Naturally it took untold millennia to do this.

As the rings of heavier material were precipitated about the poles, this necessarily laid down weight on the substrata of the infant earth.

In time this weight increased the heat of the interior, because it exerted pressure from above. This heat in turn wrought expansion. This expansion took the form of terrific interior displacements and cataclysms, in which the materials in the strata, fused into a molten state, were exploded up through the crust into the skies again and again. But these subsequent explosions did not necessarily heave these materials as high as they had formerly been in the skies, and reduced to a carbonaceous state by the burning processes they had undergone, they presented new materials for later precipitations.

NOW existing throughout all this mass, at whatever height or of whatever density, was a certain amount of moisture. In the lower rings we might almost express it that the moisture permeated the carbonaceous and mineral masses, whereas thousands of miles still higher the carbonaceous and mineral matter permeated the water. Do you get the difference? It is of tremendous importance.

It is of importance because as the lower and heavier rings or belts of matter were precipitated, they brought their water content down with them, whereas in the higher stratosphere the water as water stayed aloft and formed rings and belts of its own, to come down ages later in the form of deluges. This first water content must necessarily have produced a steam condition over the fiery planet, although it also exerted a cooling influence on the crust in its own right. As time went on, we can see that the cooling earth must have imbibed this moisture like a thirsty blotter. Comparatively small, and few and far between, must have been the ponds, lakes, and oceans on the infant planet. Not until the water canopy itself began to plunge earthward in overwhelming deluges where it lost speed at the poles, was there sufficient precipitation to form seas as we know them today.

The first of these canopy precipitations, not pure water but water loaded with metallic and mineral substances, must have formed the first lakes and oceans, or found its way in and out, or over, the corrugated surfaces of the thin cooling crust, as rivers and brooklets. Gradually the seas began to build up, albeit they must have been seas of boiling water in the beginning, deriving their temperature from the terrific heat that must have played beneath the thin new crust for untold ages. ¶ As successive water-canopy precipitations occurred, more water reached the earth than its thirsty crust could absorb. This gathered in basins and hollows and grew deeper and deeper. But those basins

and hollows in the new earth's crust were nothing like the basins and hollows existing on the earth today. The whole planet was so plastic and malleable that they were little more than wrinkles on its surface. These quickly overflowed, in a manner of speaking. More water came down than could be confined in them. The history of our planet must have been one long series of deluges. Gradually that water must have spread more or less evenly over the whole planet's surface. Whereupon a new condition arose which became responsible for the raising of hills and mountains.

THESE later canopy precipitations were laying down immense amounts of metallic and mineral substances in the vicinities of the poles, as well as far down into the temperate zones. When a water belt fell its content was distributed over the earth's surface fairly quickly because of its liquid pliability. But immediately it touched earth, it dropped its load of cosmic substances—or rather, the cosmic substances immediately sank to the bottoms of the rapidly forming oceans. This of course made for weight, pressure, and heat, at or near the place where the water precipitation was effected. Such telluric material would not go flowing evenly all over the surface of the planet like the free elastic waters. And yet, on the other hand, these waters had a weight or volume all their own, which could not be ignored in the behavior of the igneous processes in action far down under their beds.

What we should grasp is, that the deepening seas were exerting a blanketing pressure on the new earth's fragile crust. In places where the crust was not cooled to the same depth as at others, the weight of this water would depress the bottom of its basin. Or the crust, being thinner or more igneous at one spot, would sag beneath the water's weight, pushing the fiery material under it to either side. This would have the effect of interpenetrating what might be called the shore-strata with this molten material, and humping up the crust at given points, in ridges. As these ridges grew more and more pronounced, the ocean water came to be confined by them.

This meant that the precipitations of cosmic material in the new water-belts that came down, were also confined within given areas as both alluvial and telluric materials settled. This caused still more weight and pressure in the confined areas and aggravated the expansive processes so as to keep them in a fairly molten condition most of the time.

¶ This meant in turn that as this molten condition below the crust increased, the flowing igneous material must have a place to go. It could not rise upward because of the ever-increasing weight of the ocean waters. It had to go laterally, penetrating between the shore strata. As it was thus forced between such strata, the crust in-shore had to rise. And the crust did rise. It rose higher and higher, age by age. In this scheme of planetary hydraulics, the earth materials were apparently lighter than the water materials composing the oceans. So the mountain-building program began, augmented by the explosions of natural gas belts, perhaps, or by earthquake action which we shall study separately in a future discourse.

YOU will note, if you give it thought, that most of our great mountain chains are reasonably close to vast water areas, and you should grasp the reason therefor. A peculiarity of this mountain-building, as we shall see also in a subsequent discourse, was the watershed action exerted on those water areas. Material is constantly being washed down from these growing altitudes of land, to make weight on the beds of adjacent seas, which in turn makes for pressure. The pressure makes for heat, the heat makes for expansion, the material cannot expand vertically because of the water weight above it, and, seeking relief in lateral infusion, it thrusts itself in between the strata underlying those mountains. When the mountains get high enough so that the weight of the materials in them is fairly comparable to the weight of the waters in the adjacent seas, then they seem to halt building, else we should have mountains rearing to unreasonable altitudes and the earth get out of plumb. If the igneous material still keeps on expanding without strata available for infusion, there is either an earthquake or seaquake, and the proper adjustment is made in the former through a volcano, or in the latter by a new sounding in the ocean's bed.

The average oceanic depth all over the globe at the present time is about two miles. But a condition now prevails which did not prevail in this planet's infancy. All of the water rings which were suspended aloft, forming the aqueous canopy, and whose precipitation resulted in great deluges, have long since fallen to earth. Ever since the last deluge, popularly known as the Flood of Noah, man has beheld a clear heaven. We are now living upon a naked planet, exposed to the brazen temperatures of unfiltered and unobstructed sun-

light, or blasts of interstellar cold. With no more wholesale precipitations possible, the earth's crust now adjusts itself to various weights accruing almost exclusively from watershed accumulations on the various sea bottoms, or from such adjustments as may come from the melting of the polar ice-caps and the constant depositing of their alluvial content on the ocean beds of the north and south temperate zones.
¶ This last point is not to be discounted.

You will notice, if you will recall your grammar-school geographies or perhaps your travels abroad, that in both North and South America, as well as on the Continent and in the Orient, most of the volcanic areas of the globe are in the vicinity of or adjacent to areas where there are tremendous spills of alluvial materials. Where do you find the most active volcanic districts? First, in Iceland and Greenland and in parts of Alaska. Why? Because in the north temperate zone, these districts take the first influx of the melting northern ice-cap constantly laying down strata of weight-pressure-heat materials. Next consider the Mediterranean basin. Take Italy for instance. It has two of the worst volcanoes on the globe, and the greatest number of earthquakes. This is because of the terrific amount of alluvial material washing down year after year from the Alpine watershed. On the northern side of this watershed, the water either drains off toward Iceland, or spills in a curve westward, making one of the most treacherous earthquake areas on the globe: the ocean floor off Portugal, where the drainage of the Tagus River causes a disastrous earthquake regularly every 220 years.

Or take the western world. Consider that vast volcanic and earthquake area in and around the Caribbean and the West Indies. Here is the section of planet taking the gigantic spill from two of the mightiest rivers on earth: the Amazon and the Mississippi. Both of them discharge their alluvial content far out in the Atlantic Ocean. This alluvial material lays down weight on the ocean floors in the neighborhood of the West Indies, and every so often something has to give. Either the crust that is Mexico "gives," or there is a volcano or earthquake of catastrophic proportions in the Central American countries or that group of Caribbean islands off Florida. The same process operates on the western coast of South America. Down from the heights of the Andes come terrific avalanches of alluvial material that find their settlement in the eastern shoals of the Pacific Ocean. The weight-heat-pressure process operates as usual, and Peru and Chile continually report disturbances of the earth's crust with loss of life.

The significance of these volcanic areas seems to be the working out of a plain mathematical equation. Wherever you have land of sufficient area, altitude, and slant to shed water in great amount into a nearby ocean repository, you have weight, pressure, and heat, that produce expansion. This expansion brings its accompanying volcanic activity, or earthquake. The accumulating of alluvial material may go on unnoted for years or even generations. But it requires only the final five pounds of weight to start the readjustment. This readjustment may not take place immediately on the spot where the material has been deposited: igneous conditions, or crust-stresses, may cover vast distances. No matter. The relief comes in that district where the crust is most fragile, though it may be hundreds of miles from the original point of weight-laying.

PROBABLY some such process of weight-laying was responsible for the comparatively recent destruction of Atlantis. Atlantis in its prime undoubtedly extended from Iceland down to Buenos Aires, occupying most of the present Atlantic basin from east to west. This great island continent did not suddenly go down as one mass, but in three sections—from all of the testimony we can recover on the subject. The sea began to "eat" into the shores, especially on the North. We have the same condition maintaining in Greenland and Britain today—as well as in some parts of Labrador. In Greenland it is so noticeable that no Greenlander will build his house within a score of miles of shore. Five miles a year is the coast of Greenland, on the south and east, going down. All of which means that deep, deep down in the substrata an igneous condition is prevailing, infusing strata east and west with its molten material, and making an increasingly unstable foundation for our northernmost continent.

Atlantis has never gone down completely, of course. The Azores are the mountain plateaus of old Atlantis still remaining out of water at the present time. The breaking up of the continent first made the islands of Rutga and Daita. In time Rutga submerged, leaving Daita, later called Posedonia, on which island was undoubtedly located the Garden of the Hesperides, famed in Greek mythology. We shall take up this Atlantean catastrophe in its proper place. The important point to consider here is: that Atlantis was in danger of submergence from the very beginning of crust-and-ocean-making on this planet. She was an island continent, which meant that the sea on her northern

shore was constantly getting the weight of the alluvial material coming from the melting polar ice-cap. When this weight got heavy enough, the substrata became molten. When it found a lateral escape, the weight of the great island continent acted as a stupendous plunger-force from above, squeezing the molten material in all directions; but the lateral movement of the underlying igneous materials did not cease in time to save the surface of Atlantis from dropping beneath the mean level of the surrounding waters. It must have squeezed its whole foundation-strata out from beneath it. And when the squeezing process was ended, the surface of Atlantis was 2,700 fathoms beneath the waves. Then too, there were undoubtedly great natural gas belts in the strata which might also have been fired by this molten matter, so squeezed, coming in contact with them.

FROM all the information that we can gather, scientifically or psychometrically, there were many such natural gas belts far, far down under archaic rock—or tremendous gas chambers, the contents of which may have been distilled as though in a titanic retort in the bowels of the earth. So long as there had not been enough surface weight to make the necessary pressure to make the necessary heat, those titanic gas chambers would continue to hold their contents in an unexploded condition. And Atlantis, according to some authorities, seemed to have been supported over one of these. But when the pressure became great enough so that the walls of these chambers were no longer of sufficient strength to retain their contents these chambers "blew out," and a vast field for subterranean readjustments was immediately opened, which proceeded to exercise.

This igneous condition, so created far down in the substrata, has other interesting and perhaps catastrophic effects on the earth's surface. Bear in mind that our planet is whirling at a speed of a thousand miles an hour, from west to east. Out in Space, certain other planets are exercising an antagonistic pull on its surface conditions. We all know the effect which the moon has upon our tides. Consider then the effect it might also have upon a vast section of crust whose underpinnings have suddenly gone molten. There might be a sudden titanic heaving of the crust, or at least a disastrous slipping of the crust. Certain fanciful geographers delight to call attention on a map of the world to the strange way in which the eastern coast of South America seems to dovetail into the western coast of Africa. They like to con-

jecture from this that South America must at some time or other have been joined to West Africa but skidded far over westward to her present position. Such amateurs are not aware of the conformation of Dolphin's Ridge underneath the waves of the equatorial Atlantic, which tell a very different story—as we shall see presently in our proofs that Atlantis once did exist. For we have such proofs, and they are scientifically irrefutable. But regardless of whether or not South America slipped away from West Africa, we do know that slippings of the crust have not been uncommon in other places; but such slippings usually resolve themselves into a crumpling up of that crust into certain types of interior mountain ranges. The process was not unlike the crumpling up of a great blanket or canvas spread flat on a floor. The folds and corrugations would give ranges and valleys. But this slipping and crumpling would have still another effect too often discounted by the geologically illiterate. It would result in the whole surface of the globe's being broken up into prisms of rock, the cleavage of which would provide for those phenomena in Nature known as earthquake faults.

IN other words, as the earth's crust cracked or heaved, according to what might have been transpiring below—perhaps miles below—or as it slid and crumpled, this now cold crust fell together in a series of prisms, which found their levels according to the pressures behind them, from the sides of vast fields of them, or according to the supporting strength of the foundation strata beneath them. Mayhap fissures came in these prisms and geysers shot up through them; or mayhap the igneous material itself underlying them pushed its way to the surface as volcanic eruptions. Mayhap too, as these crust slippings occurred, colossal areas of stone and minerals parted company from other areas, and opened gaps so gigantic that modern humanity walks through them as valleys.

All over the earth, especially in mountainous sections, you can practically trace the outlines of classes of igneous or sedimentary materials, piled up in confusion against other classes of materials. You can find where, under a certain lateral force applied horizontally, one type of material that has been lying in a fairly even line against another type of material, has fallen back—or dropped downward like the floor of an elevator—leaving exposed that section against which it formerly rested, but for which it never had a cementing affinity.

Furthermore, if you could investigate the composition of the crust, even on both sides you would find that it has long since been broken into ledges and prisms, all jumbled together, interlocked, or piled in serried masses and the crevices filled with alluvial soil. If you could continue your investigation of the entire curve of the earth you would find it to be mostly a keystone arch. All of the prisms making up the layers must necessarily have fallen against each other in a packed condition that is the result of ages of "settling," and yet the whole—if you could penetrate down far enough—would be found to rest on molten or semi-molten material.

Whether this condition goes down to the very core of the earth, we have no means of knowing. The very fact that the heat increases as we descend a shaft in a miner's bucket, seems proof that from two to five miles down we must arrive at a furnace condition. Certainly we know that at certain depths the strata are in a condition so unstable as to be precarious for life on the surface. We are told by reliable authority that up in Ontario, for instance, a condition is increasing 3,000 feet down that has practically caused the abandonment of mining operations for gold and silver ores: the strata are shifting back and forth to such an extent that a shaft will go entirely out of plumb while a bucket is descending. Arriving at the bottom of the drop and glancing upward, the walls appear as bent as the crinkles in a woman's hairpin. And 3,000 feet down the duckboards along the bottom of the borings wobble like a dory in a cove.

The strata underlying Ontario are practically all adrift and sooner or later the effects of this unstable condition must manifest on the surface. If the ground is becoming molten at unknown depths, it may either mean that Mount Royal in Montreal—truly an extinct volcano—bursts into activity again, or there may be a complete collapse of the far-flung embankment that is the southern shores of the Great Lakes, precipitating these waters down through our Middle West. As we shall see later, Detroit and Chicago are only a matter of 15 or 20 feet above the level of the Lakes. A drop in the land-bridge that runs from Montreal out toward Julesburg, Colorado, would mean the draining of all the water in the Great Lakes and even Hudson's Bay, down toward the Gulf of Mexico.

What the weight of this drainage would mean to the Caribbean Sea area is appalling to contemplate.

WEIGHT, by the way, in whatever form we find it, is much of a mystery despite delineations of physics. We know, for instance, that if a man stands on Pike's Peak, he weighs less than when standing on the seashore. Apparently the closer we get to the center of the earth, the heavier we become. Merely as a philosophical supposition, you should weigh your most at the exact middle of the globe. And yet if you stood in the exact middle of the globe, you might wonder what your weight would truly be and what magnetic force would supply it.

This kind of a query, seriously considered, advances much of an argument for the Etheric Drift theory. By this I mean, that scientists of tomorrow may discover that weight is truly a pressure of the ether on an object from above, according to the density of the ether over it. Thus a condition would be arrived at in the middle of the earth where the etheric pressure might be equalized from all sides and the person weigh absolutely nil. A movement of six inches to right or left, however, would immediately make that person "weigh" what was tantamount to all the etheric pressure reaching or rearing above him. That, however, is a divergence from our theme. We are interested at the moment in the formation and contours of the crust of the cooled earth.

Descending to subterranean depths, I say, we encounter what seems to be an unstable condition with increasing heat, but on the cooled surface—after these many ages—there is a prism formation not unlike a vast area of children's blocks pushed one against the other in a great curve that is the horizon.

In certain types of hinterland mountain ranges, where a crust-crumbling process has gone on, we find these prisms have been hoisted in piles and then allowed to drop back into an arched position, in which they remain so long as the planet endures. One side of this arch presses against, or leans on, the other. The older they are, the harder they press. Earthquake disturbances cannot affect them, for any jiggling of the earth's surface simply tamps them the more firmly together. For this reason you rarely have an earthquake on a mountain height. Of course I except volcanoes, or so-called mountains that are nothing but gigantic ant-halls made by the overflowing of lava or the accumulations of scoria. I am writing of mountain ranges caused by the upheaval and falling-together of sedimentary rock prisms in the manner just described. The more shaking they receive, the more stable they become.

But I grant you that this may happen: If such a mountain, or mountain range, has been raised by the application of lateral pressures or crust slidings and crumblings, a subterranean chamber may result, or a hollow space beneath its arch, that may either fill up with igneous material, or water, or natural gas. All of us know to what extent caves are found in and under hills and mountains, proving the logic of our hypothesis. And into these caves molten material may be forced—to cool in process of time—or if the pressure be great, tear the top off the apex of the arch and produce an active volcano.

IN THE steppes, plains or prairie areas of the globe, we have a great assortment of different kinds of rock-prisms being held together or in place either by pressure on the sides from a distance, or because underneath there are supporting strata, either igneous or aqueous, on which they rest in a quiescent state perhaps for ages. If the igneous or aqueous foundation finds an outlet, however, this prairie level may rise of fall—presumably fall—and produce such a result as happened in New Madrid, Mississippi, in 1811-1812. For three to six months a terrific series of quakes occurred in our lower Middle West that caused an untold loss of life among the Indian tribes, and which can as easily occur again. Certainly it will occur if there be an avalanche of Great Lakes water down toward the Gulf as I have just mentioned.

The crust formations in these vast prairie sections are not unlike an equally vast area of children's blocks, I say, picked up or held supported by the pressure of gigantic hands pushed against their outer edges. Those prisms have become sifted over with alluvial material and look solid and substantial when viewed upon the surface. Prairie sections, or such flat land spaces, are really the most dangerous of places in which to live, however, for at any moment there may come a dislocation of the igneous or aqueous substrata and then the surface sways disastrously.

I WROTE a moment ago of the damage done periodically by the descent of alluvial material from some of the world's great mountain watersheds. In refreshing my mind recently on data concerning the earth's great major disturbances, I came upon a geological account of the great Lisbon earthquake of 1755 in which 60,000 people lost their lives in a matter of six minutes. The territory which Portugal occupies, as I have said, is adjacent to the ocean repository for the alluvial content of the Tagus River coming from the watershed of the Pyrenees. But what struck me as both peculiar and significant was the notation that over the past 800 years Portugal has had a major quake inevitably every 220 years. In other words, it seems to be apparent that it requires precisely 220 years to bring down enough alluvial material to weigh the Ocean's bed so that heat and expansion result, and the expansion translate into a movement of the crust prisms on or near the surface of the adjacent land.

We might turn to other great rivers of the earth and see that similar alluvial combings and depositings have kept the earth's crust in a volatile condition. Look at Japan—placed geographically so that she occupies an area that cannot help but be affected by the weight-pressure of sediment poured down toward her by those great rivers of China—the Yellow and the Yangtze. Consider the Indian earthquakes, or those of the South Seas, apparently resulting from Pacific ocean-bed readjustments from taking the spill of such great water courses as the Ganges and Mekong rivers. Bear in mind that rivers do not stop flowing and depositing their materials the instant they reach the oceans —as viewed from the land's surface. This outpouring, as from the Mississippi, the Amazon, the Yellow, the Ganges, the Po, the Tagus, continues for miles and miles out into "open" ocean. Furthermore, the spread of sediment may not always affect the area directly underneath their mouths: the substrata may be solid enough to sustain such sediment-weight near their mouths, but be in an extremely unstable condition a few hundred miles out to sea—and the latter would be the district to "give" and cause alterations of terrain.

Now some people think, in considering the earth's crust, that an earthquake fault is much like the rip of a knife across the top of a loaf of bread, something that starts in one place for no apparent reason and goes zig-zagging around the country, and only in the areas that are so touched by it are there earth-crust disturbances. After every great quake, no matter in what part of the world it occurs, geologists come

forward with a limited amount of data concerning them. But newspapers hesitate to alarm the lay mind by publicizing the information that every one-to-ten miles all over the planet there is an earthquake fault.

Earthquake faults run in zig-zag series not unlike the patchwork crust of a cranberry pie, usually from northeast to southwest in direction, or from southeast to northwest in cross-faults sometimes called Pressure Areas. You cannot pass over ten square miles of the earth's crust anywhere, without meeting with an earthquake fault, and the average geologist can usually take you over a given area and show you an earthquake fault every square mile.

The Atlanteans knew this. They knew specifically the construction of the earth that created a certain type of hinterland mountain. They knew that such a mountain made a perfect keystone arch, as I have already described, that gave stability for their habitations. Therefore we find that most of the important Atlantean cities were built on hills or mountains. If a quake came, the mountain would only shake harder together, if indeed it shook at all.

Atlantis must have been the scene of a constant program of earthquakes, situated as it was in the middle of the open Atlantic where vast deposits of alluvial material were continually settling on the Ocean's bed as the arctic ice-cap disintegrated. Consequently the motif of their metropolitan architecture was the Step Formation, usually on a hillside or mountainside—the type of Built-Back Terracing which we are now commencing to adopt in our city architecture, not for safety, however, but for air and light.

The great palace in the center of Atlantis, which we shall touch upon in a coming Lecture, and whose magnificence and architectural detail never have been surpassed, was erected in such a way that it covered an entire mountain, with a circular ramp mounting up its sides. In the age that we are entering now, we may come into a general knowledge of the practicality and safety of such architecture. For thousands of years this great capital of Atlantis was noted for its central city and central palace, its perpendicular walls rising in tiers, covered over with orichalcum or copper sheathing. However, to return to our subject—Earthquakes.

WHEN we speak of earthquake faults, and name some of them, we ordinarily refer to major fissures whose pattern and extent have been mapped, because of their distinctive activity over a long period of time. A fault, properly speaking, is a section of prism formation of one composition that is detached from another section of prism formation and that rubs against it, either obliquely or vertically as the case may be. In some places these make themselves apparent by the way in which they have raised or dropped, perhaps a few feet, perhaps for miles. In the American Southwest, traversing the desert particularly where New Mexico and Arizona join, one can behold what appears to be a series of terraces, rising one above another from the desert's floor, that could not have been formed so lengthily or symmetrically by weather erosion. Looking across the whole sweep of country and noting these terraces, it is possible to pick out where the earthquake faults lie, and where whole tablelands or valley floors have dropped in far-flung sections.

As we look over the surface of North America, we find that the Laurentians, the Catskills, the Alleghenies and the Ozarks constitute our oldest mountain ranges in this western world—including the Blue Ridge and Smoky chain in Virginia and the Carolinas. They were undoubtedly raised to their present heights by the fiery plunger-force exerted on the substrata by the sinking of Atlantis. Afar in the heart of the continent we find the Rocky Mountains which seem to have been raised by the hinterland crumbling process. Between these, spans a mighty sweep of flat country that we too often dismiss by remarking that it was once the bed of a great inland lake or sea. What we should say is: it is a massive floor of rock prisms held together by lateral pressure or because it is resting on igneous or aqueous substrata and which has dropped to its present level because of the tremendous water-pressure that once was exerted upon it.

All of the country from western Pennsylvania, in a great semi-circle around to the Rockies in the vicinity of Denver, and down to about Memphis, Tennessee, was once the area covered by Lake Agassiz, the basin filled up by waters from the melting of the ice of the last glacial period. Now "glacial periods" deserve a moment of attention.

MOST people are aware that from time to time back over the history of the continents, there have been so-called Glacial Epochs, or Ice Ages. But comparatively few know how they materialized or what wrought their disappearance. We have to go back a bit and review briefly the manufacture and disintegration of the many polar ice-caps which our planet has experienced.

We have said that one by one the high water-rings drifted away from the equatorial suspension, 17,000 miles aloft, and blanketed the earth with a water canopy that gradually slurred off and fell to the poles as the planet slowed in its whirling. As these rings came down in deluges in the regions toward the top and bottom of the earth, where centrifugal force was practically nil, they turned to snow. This snow fell in an instantaneous avalanche, a precipitation so swift and terrible that animals like the mammoth were caught with trunks upraised and foliage in the act of being eaten. Hitting the earth and blanketing it to a depth of hundreds of feet, it packed into ridges and valleys. Here it was soaked down into a hard ice-pack by applications of rain falling in the more kindly seasons. Any one of you who once made a snowman in your childhood, know that you truly had an effigy of ice in the morning after a warm rain followed by a quick freeze. So was this celestial snow precipitation rendered into a kind of snow-ice. ¶ Now bear in mind two influences acting on that arctic ice-peak. The first was the greenhouse condition that maintained farther southward under such part of the canopy as had not yet fallen. This canopy not only kept out the higher interstellar frigidity, but retained the heat arising from the earth's crust under which the molten interior of the earth acted like furnace pipes running beneath the floor of a dwelling house. The farther toward the equator one traveled, the more insufferable did this temperature become.

The second influence acting to disintegrate each polar snow-ice-pack, or Ice Age, was the centrifugal whirling force of the planet itself. Whatever fell near the poles must be moved toward the equator, because the surface at the equator was turning faster than land areas near the poles. This throwing toward the equator might be imperceptible to a man walking on the earth's surface, but the blanketing ice-cap was forcefully affected by it. The ice, as it melted on its lower southern fringe, or broke off in glacial bergs, must travel southward because of the centrifugal pull of the faster-turning equator. This centrifugal pull carried both ice-fields and bergs from the naked-sky

arctic circle, in under the water ceiling of the canopy. The farther south they were thus conveyed, the hotter became the confined temperature they met with, and they were melted at a much faster rate than are detached portions of the present polar ice-cap. The warmer earth—its hot-house condition increasing as the equator was approached—made the glaciers move faster. We might even put it that they became "more slippery on their bottoms" because the terrain heat melted them fastest on their under-surfaces. Coming down into the north temperate zone, they were changed to water. In the North Atlantic they not only added to the ocean's water volume but they dropped their telluric material to the bottom. On the North American continent they took the form of vast ice-fields, steadily traveling southward and bearing stupendous quantities of metals, minerals and boulders. By the time they arrived at a point that is now Wyoming they encountered a great inland basin that was almost a sea in itself. This basin, or inland sea, has been labeled Lake Agassiz, after the great naturalist. Breaking off on reaching Lake Agassiz, the glaciers contributed bergs to its water content, which in time disintegrated and filled the Midwest basin to its brim.

The average depth of Lake Agassiz, whose ancient shore-lines can be plainly discerned throughout Ohio and Indiana, was 500 feet. At that height on the hills one can behold the rubble and water markings, especially if the season be the spring, or late autumn when all foliage has vanished and left such markings exposed.

NOW this great basin did not drain into the Gulf of Mexico as at present. It emptied out to the northeast, across Ontario and into the North Atlantic in the vicinity of Newfoundland. The Ozark and Tennessee mountains presented an unbroken southern dam to hold back this vast weight of water. Not until the alluvial repository in the North Atlantic had become heavy enough to cause the subterranean heat that pushed up the White Mountains and hills of Quebec and New Brunswick by the fiery-hydraulic method, did Lake Agassiz' depth grow great enough to spill over the Ozark Mountains and begin cutting the Mississippi's channel.

For untold ages the vast water content of Lake Agassiz, containing not only the residue of melting glaciers and bergs but the watershed precipitations from the Alleghenies on the east and the Rockies on the west, reached its ocean outlet over the territory now traversed by

the St. Lawrence. In other words we might say that there was a time when the Mississippi River ran northeastward instead of southward—not the mile-wide river of the present of course, but at least the watershed precipitations from hinterland terrain that now compose the Mississippi.

Evidence that this hypothesis is correct, is found on the terrain itself in the form of markings, and in the vast boulder fields that stretch from Indiana and Ohio northeastward across New York and New England. Strange it is, otherwise, that these great areas should be covered with these boulders and that they should not be found in exactly the same condition and profusion elsewhere.

What happened was: these glaciers traveling down from the arctic circle after each water-ring precipitation had laid down a new polar ice-cap, picked up and brought along great quantities of loose stone and gravel, the former ranging all the way from pebbles to rock-masses as big as ordinary dwelling houses. Reaching Lake Agassiz and breaking off in the form of icebergs, these contingents of disintegrating glaciers floated free in America's inland ocean, and as they melted they dropped their mineral burdens. But these great bergs did not melt in a day. Long before they began their titanic depositing of pebbles and rocks they had responded to the influence of the northeast current in Agassiz and gently worked their way toward its eastern or northeastern shores. This northeast current was merely the pull of the waters that were escaping out through the St. Lawrence channel; but being far mightier than it is at present, it brought these bergs in great coagulated masses over what is now New York and New England.

An interesting side light on this berg activity is found in many places throughout Indiana, Ohio and southern Michigan. Not all the bergs congregated along Agassiz' eastern shores. Some of them extended to such a depth below the water's surface that their bottoms grounded on hillock promontories on Lake Agassiz' bed. Held so, they disintegrated and dropped their alluvial loads in a deposit of materials that make a museum for the geologist. Others may have had prodigious boulders on their under-surfaces which acted as titanic plowshares as the bergs floated eastward. Such plowshares gouged great grooves across the submerged hills, that can be seen plainly to this day. Others came to a complete halt where the weight of the berg or the force of the current was not mighty enough to continue the furrow. Melting in that halted position, they dropped the underlying boulder that had

acted as the plowshare, in the defile thus created, or at its end. Boulder on boulder can thus be pointed out at present, like a mammoth egg deposited in a terrain nest by some prehistoric monster.

Sometimes the halted berg tilted and rocked in its position as its melting went on, and traces are apparent where such rocking and weighting flattened the submarine promontory responsible for arresting the berg. ¶ In the main, however, these free bergs gathered over that great reach of country from Ohio eastward. Particularly in Vermont and Massachusetts did they scatter their contents in a mighty graveyard of glacial rocks. And today the meadows and pastures of New England are but a thin layer of erosive soil laid over these acres of rocky deposits, so that the New England farmers speak colloquially of "filing the sheep's noses so that the animals can get the grass between the rocks."

Under the greenhouse roof of the very ancient world, these polar icecaps disintegrated at a much faster rate than the present one is doing—as I have said. So mankind had the Ice Ages, one by one. But it was the disappearance of Lake Agassiz, as a lake, that wrought the true contour of the North American continent in which we are particularly interested.

THE disappearance of Lake Agassiz is explained very simply when we recall our weight-pressure-heat-expansion hyopthesis for alluvial material deposited on an ocean's bed. ¶ For untold periods the melting bergs and the watershed precipitations found vent through the Ontario and New England country. But their sedimentary material was piling up on the ocean's floor off Newfoundland. As it piled, it made weight. Weight made internal pressure on the submarine strata. This pressure generated heat and the heat fused the strata into igneous material that "had to go somewhere." . . .

It did go somewhere. It was forced by the same fiery hydraulics I have previously described, under and beyond the western shores of the Atlantic. The White Mountains and the Green Mountains began to lift higher and higher. The heavily hilled country back of Cape Breton came up. The free egress of Lake Agassiz began to be choked and stemmed. As it was choked, Lake Agassiz rose higher. There is not lacking evidence that some of this molten material came to the surface in fiery fountains of lava. Mount Royal near Montreal is practically an extinct volcano, and Mount Royal is not alone in this

regard. Earthquakes may have altered the Northeastern area of terrain, as well. Lake Agassiz no longer got relief for her deepening waters by plunging northeastward toward the Atlantic. She continued to fill. She filled until the day came when she brimmed over the Ozark Mountains in the vicinity of Memphis, Tennessee, and in that instant the Mississippi River was born.

The Ozark Mountains in the vicinity of the point of brimming over were of such composition that the water "ate" a channel quickly. The wider the channel became, the more powerful grew the cutting force because of the tremendous water pressure behind it. Soon the mountain soil was going Gulf-ward at a terrific rate, and the Memphis Cut was deepening to such an extent that Lake Agassiz was losing a far greater volume of water than she had ever expended normally through her former St. Lawrence vent.

With most of the polar ice-cap gone by this time, the glacial period over for the moment and certain land formations becoming permanent in the Ontario valley, the entire Middle West was completely drained. Thereafter the drainage continued as the Mississippi River, but only concerned in emptying toward the Gulf the watershed precipitations from North, West, and East. The great Midwest found itself blanketed with tons of rich alluvial soil that had been the sprinkling from the glaciers and their bergs over untold centuries. The deeper parts of the original basin, not touched by the Mississippi drainage, remained filled with a certain smaller water volume, and we have the Great Lakes to this day.

Thus North America as a continent began to take definite contour.

Just what happened in Central and South America is another story. We know, for instance, that Central America was not always the narrow isthmus that we discern it to be today. Probably there was a time when Central America almost approximated the North American continent in width. This status was undoubtedly contemporaneous with Atlantis. When Atlantis sank, the great tidal wave that accompanied the sinking did catastrophic things to the land areas throughout Mexico and southward. As for South America itself, I shall touch on terrain alterations there in a separate Lecture.

THE point that we are most interested in, as students of the archaic processes which have resulted in our present concepts of culture, is the little-known fact that North America is truly the Old World, while Egypt and the Mediterranean countries, with their accompanying Grecian and Roman "civilizations," compose the New World. This contention is revolutionary to our accepted standards of ethical thinking, but none the less it is a stupendous truth.

The Yazoo River in Mississippi was once known by the Indians as The River of Magnificent Ruins. What ruins? There are no traces of ruins along the Yazoo River today: merely a far-flung acreage of cypress swamps. Throughout Ohio and Indiana we have the earthworks of the Mound Builders. We are accustomed and encouraged to consider them as the handiwork of freak Indians who had a propensity for piling up gravel as some sort of a religious rite. We might be severely jolted in this present shanty civilization of ours which we arrogantly consider so advanced, to be told that the continent of North America was once overrun by a race of men even more advanced in the arts and sciences than we. We shall consider some of the achievements of these races in our later studies.

Take road-making for instance. We think today that we know how to make roads. We hold a public ceremony over the completion of a little strip of concrete eight inches thick, running one or two hundred miles. The frost gets into it through half a dozen winters and in twenty years it must be pulled up and relaid. The race of men that once inhabited North and South America made their roads of solid rock, four to ten feet thick, fifty feet wide, with protecting walls eight feet thick, across mountain chasms, and they carried on such construction for a thousand miles!

That was real road-making, and those roads have endured after fifty centuries. They can be traveled over at the present moment in Peru and Chile. We cannot build roads that last and we cannot make enduring buildings. Our buildings today are little tawdry mud huts, albeit we call the mud-blocks brick, slammed against one another in grotesque architecture that suits any owner's fancy. One tilt of Manhattan Island would send all of our modern New York skyscrapers rattling off the Atlantic Shelf to the ocean's bottom like a mass of tin toys. We know nothing of the real achievements of the past, and yet we are bombastically encouraged to continue in our ignorance and think we are the smartest and most advanced people who have ever

existed. The pity, and the folly, and the tragedy of it!

Before considering where life came from, to thrive on this planet, however, let us take up a discourse on the subject of earthquakes and terrain crust formation, as having a still more significant bearing on our concepts of Divinity. . . .